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ABSTRACT

A pilot study sought to determine whether an ethics course had an impact on the moral maturity of college students in technical communication. Two groups of students from Drexel University (Pennsylvania) and the University of Minnesota (one group of nine with a previous ethics course, and one group of seven with none) were presented with a hypothetical case involving a moral dilemma, and wrote essays about what they would have done, if they were a technical communication manager, to resolve the conflict. Holistic scoring showed that students with a prior ethics course had both the highest scores in moral maturity and the highest word frequencies in their essays, suggesting that the ethics course may have had a favorable impact. (Four appendixes include scoring sheets, student responses, the ethics course syllabus, and a review of the literature in ethics education. One hundred forty-eight references are attached.) (SR)

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A Pilot Study Measuring Moral Maturity among Technical
Communication Students

Jonathan G. Russell

Master's Thesis
Rhetoric Department
University of Minnesota

January, 1988

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A PILOT STUDY MEASURING MORAL MATURITY AMONG TECHNICAL COMMUNICATION STUDENTS

Introduction

The literature on moral education is voluminous and interesting (see review of literature in appendix D), but it fails to address basic questions.

Two questions include:

1. Do ethics courses affect secular college students?
2. Do ethics courses enhance college students' moral maturity levels?

The review of literature seems to indicate that research similar to mine is practically non-existent. The literature on moral education includes one comprehensive, empirical study focusing on the effects of moral education on college students. Burton's (18) article cites Hartshorne and May's (60) research conducted in 1926 which studied the effects of collegiate moral education using the "Character Education Inquiry" (CEI) technique. As Burton shows us, the CEI technique produced significant data describing various levels of moral development in college students. A summary of Hartshorne and May's research can be found in Burton's (18) article, or a more thorough treatment can be found in the authors' research Studies in the Nature of Character; see bibliography in appendix D.

My pilot study provides empirical evidence of the impact that an ethics course has on college students.

Hypothesis

The data were analyzed to test whether there were varying levels of moral maturity existing between the two test groups. The question this

study addressed was, does an ethics course integrated into a technical communication program have significant impact on developing moral maturity in technical communication students? Therefore, the null hypothesis is that no varying levels of moral maturity exists between the two groups.

Method

The two groups were students enrolled in technical communication degree programs at Drexel University and the University of Minnesota. Sixteen students were selected for the study, nine from Drexel University and seven from the University of Minnesota. The Drexel University students were chosen because of their participation in an ethics course in technical communication. The University of Minnesota students were chosen because they did not participate in an ethics course in technical communication.

The hypothetical case used for this study was invented by Professor Arthur Walzer based on an example reported in Technical Communication by Lee Shimberg. The two groups were asked to consider a dispute in the case involving a technical writer and the head of the engineering department, both of whom worked for the same railcar company. The dispute involved the technical writer's claim that the fire safety features of the latest railcar being marketed by the company were not as safe as the head of engineering wanted to claim. The technical writer's position was to reword the proposal more truthfully, while the head of engineering wanted to keep the original wording fearing the company would otherwise lose the contract.

There was one mailing to Drexel University in Philadelphia, Pennsylvania to Professor Jacques Catudal's "Ethics in Technical and Science

Communication" class. There was one mailing to Professor Earl McDowell's "Research in Communication Strategies" class at the University of Minnesota. All students of both groups were given approximately five minutes to read the case study and twenty-five minutes to write an essay about what they would have done had they been the technical communication manager in charge of resolving the conflict between the technical writer and the head of the engineering department.

The responses to the case study were then compared using a modified version of holistic scoring originally developed for the Educational Testing Service (ETS). (See Teaching and Assessing Writing, Edward M. White, 1985, chapter 2.) The holistic method was developed as a reliable and economical measuring device of writing ability. Holistic scoring here is modified to measure moral maturity in the respondents. Holistic scoring is able to achieve acceptably high reader reliability by adding a series of constraints to the efficient practice of general impression scoring. Basic to all these constraints is a carefully developed and precise writing assignment (sometimes called a "prompt"). Six procedures and practices have been developed for scoring, and all six procedures are followed in deliberate order. Since these procedures were developed for large volume testing administered by ETS, the scoring here is used in a much smaller population.

The Six Procedures:

1. Controlled Essay Reading. Three readers were brought together to read the responses at the same time and place. The readers were chosen for their expertise in the fields of ethics and education. They were Professor J. Vernon Jensen, Professor in the Speech-Communication Department at the University of Minnesota. Dr. William Hunt, who has taught applied ethics, and Associate Professor Arthur Walzer, professor in the Rhetoric Department at the University

of Minnesota (who acted as the "arbiter" reader in the event that the scores of the other two readers differed by two or more points.

2. Scoring Criteria Guide ("the rubric"). The readers' responses were described on a continuum of "worst" to "best" in regard to respondents' levels of moral maturity using numbers 1, 2, 3, 4, 5, & 6. "1" was considered the "worst" and "6" was considered the "best." The best responses were defined with the characteristic traits of the working definition for moral maturity: "the empathetic, careful, conscientious, and thorough consideration of a moral problem."
3. Anchor Papers. The three readers determined that four responses would be a guide that represented the "worst" and "best" responses. There was one anchor response from three categories (two were chosen for the "best" category). The categories were: the score of 6 - "Best"; the score of 3 or 4 - "Mediocre"; and, the score of 1 - "Worst." The anchor papers established a criteria for the readers when reading the remaining essays.
4. Checks on the Reading in Progress. Since I authored the study and knew the origin of the respondents, I acted as the "table leader" who was responsible for checking on the consistency of the scoring.
5. Independent Scoring. Each of the two readers scored the responses independently. Each response was read twice by each reader. The holistic scoring method requires that unless there is more than one reading for each response there is no way to evaluate the reliability of the reading or of individual readers. A one-point difference between the two readers' scores was allowable. Responses with a two or more point difference were placed aside and read by the "arbiter" reader who administered an independent score. His independent score was the final score for those responses. The two or more point differences between the two readers occurred in only two cases during the reading.
6. Evaluation and Record Keeping. Scoring done by the readers was recorded for further analysis leading to the results of this study. (See appendix A for actual scores submitted by the readers).

Limitations

The holistic scoring procedure is a means of rank ordering responses according to the criteria established. While efficient and economical, it is only a rank ordering. The holistic score is like a percentile rating. It has meaning only in reference to the group that was tested and the test criteria embodied in the scoring guide for the particular test. Therefore, holistic scores cannot be regarded as absolute values. Further limitations lie in the size of the test group. Since this is a pilot study, its intention is primarily to suggest varying levels of moral maturity between two test groups. This study is meant to pave the way for larger studies of this kind in the field of ethics in technical communication.

Further limitations in this research are that, 1.) ideally, I would have conducted a pre-test with both Drexel University and the University of Minnesota to establish whether all the students used in this research had similar or dissimilar backgrounds in ethics education prior to this study; and, 2.) it might have been more advantageous to research both groups from Drexel University alone, that is, one group who participated in an ethics course (like Professor Catudal's) and a group that did not participate in one.

Results

I consulted with Professor Earl McDowell of the Rhetoric Department at the University of Minnesota, for his expertise with statistical variable analysis which helped to compose the tables for this study.

Table 1 provides the distribution of the readers' scoring of each test group and the percentage of the occurrences. This table shows significant percentage clustering in both groups. In most cases, Table 1 shows evidence suggesting that the students' participating in the ethics course received higher scores from the readers, indicating a more developed thinking

PERCENTAGE TABLE

Readers' Scoring of Responses
(Chi-square)

Chi-square = 16.00
 $\chi^2 < 1.001$

Drexel University
(Ethics Course Participants)

9 Responses

University of Minnesota
(No Ethics Course)

7 Responses

Score Range (1 to 6)	Number of Responses	%	Number of Responses	%
1 = worst 6 = best				
1 - 2			5	72%
2.1 - 3	1	12%	1	14%
3.1 - 4	4	44%	1	14%
4.1 - 5	2	22%		
5.1 - 6	2	22%		
Avg. Score =	9 (4.51)	100%	7 (2.43)	100%

WORD FREQUENCY

(T-test)

T-value = 5.027

 $p < .001$ Drexel University

(Ethics Course Participants)

9 Responses

University of Minnesota

(No Ethics Course)

7 Responses

Code Name	Word Frequency	Code Name	Word Frequency
George	330		
Bob	243	Monica	104
Jan	369	Dan	96
Larry	325	Deb	73
Brenda	241	Frank	220
Fred	286	Sheila	93
Janet	324	Jack	70
Cybil	335	Dorothy	137
Stan	149		
TOTAL	2,602		793
(divided by)	<u>9</u>		<u>7</u>
	$\bar{X}$ 289.111		$\bar{X}$ 113.285

READERS' SCORING OF RESPONDENTS

Scoring Continuum = 1 2 3 4 5 6

1 = worst

6 = best

Drexel University

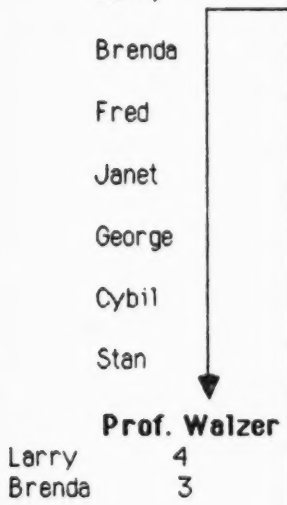
(Ethics Course Participants)

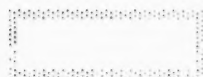
9 Responses

University of Minnesota

(No Ethics Course)

7 Responses

Code Name	Prof. Jensen	Dr. Hunt	Code Name	Prof. Jensen	Dr. Hunt
Bob	4	4	Monica	1	2
Jan	5	4	Dan	1	2
Larry	5	3	Deb	1	1
Brenda	5	3	Frank	3	2
Fred	4	3	Sheila	2	1
Janet	5	5	Jack	1	2
George	5	6	Dorothy	3	3
Cybil	6	6			
Stan	3	4			
					
Larry	4				
Brenda	3				



= Where score spread was greater than 2 or more points.

strategy regarding the moral conflict posed in the hypothetical case. Table 1 also shows evidence that the students who did not participate in an ethics course were clustered heavily (71%) between the "worst" (1) and "mediocre" (2) range suggesting a significantly lower level of moral maturity. This same table also suggests that the students participating in the ethics course were more evenly distributed in the upper score ranges with the most clustering (44%) in the mid to upper-mid score range (3.1-4), with their next highest percentage clustering (22%) in the upper "mediocre" range and the "best" range (4-6). Table 1 shows the average score each group received. With the score of 6 - "best" and the score of 1 - "worst," the Drexel group had the higher average of 4.55 compared to the Minnesota group who averaged 2.43.

Table 2 describes the word frequency variances between the test groups. The differences between the two groups' averages were examined using a two tailed t-test. Table 2 indicates evidence of a significant value of 5.027. Table 2 indicates that the students participating in the ethics class had the higher mean word frequency score of 289.11 words per essay compared to the students not participating in an ethics course whose word frequency score was 113.29 per essay.

The relatively low interrater reliability score of .368, which resulted from the allowable one point difference in many of the holistic readers' scores as well as the two instances when the difference was two points or more, is somewhat misleading with respect to the unique holistic scoring methods. This low reliability is explained further in the discussion section of this study.

Discussion

Comments about interrater reliability.

First, the holistic scoring method that allows each reader to differ by one point for each respondent occurred often. Most interrater reliability scores are calculated on the basis of "closeness" of each rater's scores for each respondents' essay. According to Edward M. White, Teaching and Assessing Writing, 1985, p. 26, "a one point difference between the two scores is allowable; papers with a two point difference or more are read a third time in order to resolve the discrepancy." Since the holistic scoring method allows for a one point difference, the frequent one point differences that occurred between the two readers in this study resulted in the relatively low interrater reliability score (.368). Given the unique nature of the holistic scoring method, the interrater reliability scoring procedure used here did not adjust for the allowable one point scoring difference.

Second, the one point differences that occurred frequently between the two readers (see Table 3) most often occurred when they had to administer a score of (4) or (5) and scores of (2) or (3). Since the scores of (2) and (5) did not have "anchor" papers acting as representatives of that particular score's definition like the ones defined for "worst" (1), "mediocre" (3 or 4), and "best" (6), the one point differences occurred regularly when the readers had to make these "fine-point" distinctions on each essay.

As reported earlier, there were only two instances in which the scores of the readers differed by two or more points. This study suggests that the one realistic way to increase the interrater reliability variable would be for the readers to consider six anchor papers representing each possible score on the (1 - 6) scoring continuum, instead of four representing "best," "mediocre," and "worst." If this modification of the holistic scoring method were possible, the interrater reliability variable would undoubtedly increase,

especially in the case of the judges in this study, who were usually within one point of each other.

Further discussion of the study results.

The data in Tables 1 and 2 indicate that the ethics course the Drexel students participated in may have had a favorable impact on them. It is important to note in Table 2 that the students who participated in an ethics course tended to write more which seems appropriate, since a thorough analysis often requires discussing a problem's several dimensions; which in turn, often requires more words than those who focus on fewer aspects of a problem.

The technical communication students who participated in the ethics course had both the highest scores administered by the readers and the highest word frequencies. This suggests that the ethics course may have had a favorable impact on shaping these students' moral maturity. Of course, this does not imply that the Drexel students are more ethical than the Minnesota students. The evidence only suggests the potential benefits to technical communication students participating in an ethics course tailored for the technical communication student. The ethics course at Drexel seemed to build the students' critical thinking skills which in turn seemed to help them more able to assess and resolve the moral conflict in the hypothetical case study.

Given the direction of the findings, it appears that the higher moral maturity of the Drexel students suggests that the ethics course may have had an effect; certainly, the conclusions justify further research involving more subjects from a single school.

If future research sustains the validity of this study, the next logical step would be to investigate teaching methods and design materials suitable for ethics courses in the undergraduate and graduate technical communication programs at the University of Minnesota.

APPENDIX A

SCORING SHEETS OF DR. W. HUNT AND PROF. J. V. JENSEN

Vera Jensen

Scoring Sheets:

Code Name: Bob

1 2 3 ④ 5 6 *high*

Code Name: George

1 2 3 4 ⑤ 6

Code Name: Jack

① 2 3 4 ~~E~~ 6

Code Name: Janet

1 2 3 4 ⑤ 6

Code Name: Jan

1 2 3 4 ⑤ 6

Code Name: Dorothy

1 2 ③ 4 5 6

Code Name: Frank

1 2 ③ 4 5 6

Code Name: Sheila

1 ② 3 4 5 6

Code Name: Del

① 2 3 4 5 6

Code Name: Stan

1 2 ③ 4 5 6

Code Name: Cybil

1 2 3 4 5 ⑥

Code Name: Fred

1 2 3 ④ 5 6

Scoring Sheets:

Vern Jensen

Code Name: Dan

① 2 3 4 5 6

Code Name: Brenda

1 2 3 4 ⑤ 6

Code Name: Larry

1 2 3 4 ⑤ ⑥

Code Name: Monica

① 2 3 4 5 6

Code Name: _____

1 2 3 4 5 6

Code Name: _____

1 2 3 4 5 6

Code Name: _____

1 2 3 4 5 6

Code Name: _____

1 2 3 4 5 6

Code Name: _____

1 2 3 4 5 6

Code Name: _____

1 2 3 4 5 6

Code Name: _____

1 2 3 4 5 6

Code Name: _____

1 2 3 4 5 6

Scoring Sheets:

Code Name:

Bob

attention to facts
not much on principles & outcome

1

2

3

5

6

Code Name:

Jack process in situation

1

2

3

4

5

6

Code Name:

Janet bites the bullet

1

2

3

4

5

6

Code Name:

George not at principles

1

2

3

4

5

6

Code Name:

Jan

1

2

3

4

5

6

Code Name:

Dorothy

1

2

3

4

5

6

Code Name:

Frank

1

2

3

4

5

6

Code Name:

Sheila

1

2

3

4

5

6

Code Name:

Stan

1

2

3

4

5

6

Code Name:

Cybil utilitarian analysis

1

2

3

4

5

6

Code Name:

Don

1

2

3

4

5

6

Code Name:

Fred not much on process,

1

2

3

4

5

6

Scoring Sheets:

William C. Hunt

Code Name:

Brenda

1

2

3

4

5

6

Code Name:

Larry, lots of process, not very efficient on analysis

1

2

3

4

5

6

Code Name:

Monica

1

2

3

4

5

6

Code Name:

Deb very brief

1

2

3

4

5

6

Code Name:

1

2

3

4

5

6

Code Name:

1

2

3

4

5

6

Code Name:

1

2

3

4

5

6

Code Name:

1

2

3

4

5

6

Code Name:

1

2

3

4

5

6

Code Name:

1

2

3

4

5

6

Code Name:

1

2

3

4

5

6

Code Name:

1

2

3

4

5

6

APPENDIX B

UNIVERSITY OF MINNESOTA

AND

DREXEL UNIVERSITY

STUDENT RESPONSES

UNIVERSITY OF MINNESOTA RESPONSES

INSTRUCTIONS:

Please read the following scenario, then write your response to the question that follows as fully as you can. Please note that there is no absolute correct answer to the position you will be taking, more importantly, your explanation in arriving at your decision will be evaluated in this study.

SCENARIO:

RCR Technologies is a large firm that designs and tests high-speed rail cars. Currently, the Engineering Department is responding to a bid from TransAmerica Railroad with a proposal stating that TransAmerica should buy its "state-of-the-art" rail car. This is a potentially lucrative contract, and your department, the Department of Information Design, is assigned the job of preparing the final proposal. You assign the job to Samantha Turner, the technical writer who has worked closely with the engineers on the proposal.

A few days before the final print of the proposal, Turner comes to you upset. She tells you that she had made a number of changes in the draft proposal from Engineering. Usually, Engineering checks her changes for accuracy and approves them. This time, Engineering did not accept an important change. Turner claims the change Engineering rejected is quite important, and the basis for Engineering to reject her change appears to be because her version is too accurate.

Turner's rejected change concerns the safety system of the proposed rail car. Engineering's version of this part of the proposal says:

...in the event of a fire, a sensitive electronic system has been designed to bring the train to a gradual stop and automatically open the doors.

Engineering wants to keep this wording. The head of Engineering firmly believes RCR will lose the contract if they change it to Turner's version. Turner admits that this statement is literally true but is misleading: the electronic system is designed to do what is claimed, but many RCR engineers Turner has talked to agree that the system has not worked consistently for all types of fires in all conditions. Some engineers think the system will have to be scrapped entirely and design a new one. Others think the existing system needs to be modified. All agree that the electronic system does not operate properly under the current design.

QUESTION:

On the attached page please write about the following question. Use both sides of the attached sheet if necessary. There is no correct answer. Please state your position.

As Turner's technical communication manager, how would you resolve this conflict of ethics between the Departments of Information Design and Engineering? Critically evaluate the ethical differences occurring in this scenario in arriving at your conclusion.

Dorothy

- Engineers are thinking of bungling in money + contracts.
- They are possibly not wanting to face up to the fact that the company has been paying them to develop this fire safety feature + their final product does not work - they don't want to confess failure.

The technical writer feels honesty is the best policy. She may be thinking of future repercussions to the company - if they sell ~~down~~ the contract, RCR buys it, the train catches on fire + the fire safety features don't work, the company ~~is~~ will get sued + their reputational credibility will be squelched, + people could die as a result.

~~To~~ To solve the situation I would meet with the company president, vice president, ~~a~~ head of engineering department + discuss the issue. I would press to use ~~Sam~~ this wording because of the possibility of the company losing its credibility, being sued + people dying.

Jack

Turner is concerned with the public's safety or the public good. The company, specifically the engineering dept., is concerned with money and losing the contract.

The heads of the two depts. - Prof. DSG and Engineering - should discuss the differences with Turner. The tech. cons. mgr. present and attempt to resolve the disagreement. They should also discuss how members of each dept. feel - what they think.

Sheila

I don't really understand all the "proper" channels of how businesses operate & I am at a loss as to what a person has to do in order to get the ~~proper~~ more accurate statement into the proposal.

However, I feel that it ^{would be} ~~it is~~ my job to back Turner up in her version of the proposal. Obviously, people's lives could be at stake and that is more important ^(in my opinion) than any money the company will lose if they lose the contract. Also, I would try and convince the company that the long term benefit may outweigh any short-term profits. i.e. If their crashes $\Rightarrow$ people die $\Rightarrow$ bad law suits $\downarrow$ bad company image.

As her supervisor I would ask that the problem be considered by the legal department of RCR Technologies. Above personal ethics, this question concerns the potentiality for lawsuits & other litigation. The tact is to convince the company that such conflict resolution is in the best long-term interest of RCR Tech.

Ethically, this is a disaster - human lives are involved -- but this has never stopped most for-profit companies. (AT&T ROBINS & the Balkan Shield is a prime example)

I have worked in for-profit corporations & this is not an uncommon problem. Often the ethical question, when fully examined & ^{asked} upon, means the difference between working or losing your job. Ethics combined with economics is a difficult choice.

The engineers' job might be on the line (faulty design) & opt to ignore the obvious dangers & risk lives to secure the contract.

The Info dept is now aware, ethically of the dangers & must make the decision whether to jeopardize 1) their jobs, 2) the company's financial (hence, stockholders & employees) status by pressing the point or 3) risking human life by keeping silent.

For my own ethical peace of mind, if the legal tact didn't work, I would take moral responsibility & send a anonymous letter to TransAmerica) telling of the flaw. Capitalism does not allow for ethics as it is defined & practiced in America. 27

Deb

I would ~~not~~ look for a compromise that would state the conditionality of the current safety system, but emphasizing the possibility of producing a more useful system in the future.

Jobs and cars are on the line and obviously many people feel they can hide & inaccuracies ethically if they reveal them later when the order for the cars is in. Especially since this is a safety device that might involve people's lives in an accident the behavior is suspect.

Dan

I would ask the Chair of the Engineering Department, the engineers who are working with Mr. Turner's changes, and Mr. Turner to meet with me. I would request that each participant in this meeting report his or her facts and opinions as it pertains to the electronic system. I would ~~set down~~ the accuracy of the proposal would be the only issue at stake here. Whether or not the proposal would be accepted would not be a topic for discussion. When the facts of the safety electronic system regarding its safety was agreed upon, I would request this be put in writing and sent to the V.P.'s in Charge of sales and Quality Control.

As manager, I think I would talk to the engineers to get more info on the subject. It is the Comm. dept. to present accurate, clear proposals. If the system needs to be redone, I would present the case to the CEO.

I would stand behind the judgement of Sam Turner.

It's difficult to imagine this position without knowing more info. What did Turner write? Was it accurate or exaggerated? What happened in the other incidents when the system failed? Why has this been overlooked if things haven't gone well?

If the company is responsible for this, the product needs to be improved. If for no other reason - for the sake of the company's reputation.

DREXEL UNIVERSITY RESPONSES

INSTRUCTIONS:

Please read the following scenario, then write your response to the question that follows as fully as you can. Please note that there is no absolute correct answer to the position you will be taking, more importantly, your explanation in arriving at your decision will be evaluated in this study.

SCENARIO:

RCR Technologies is a large firm that designs and tests high-speed rail cars. Currently, the Engineering Department is responding to a bid from TransAmerica Railroad with a proposal stating that TransAmerica should buy its "state-of-the-art" rail car. This is a potentially lucrative contract, and your department, the Department of Information Design, is assigned the job of preparing the final proposal. You assign the job to Samantha Turner, the technical writer who has worked closely with the engineers on the proposal.

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QUESTION:

On the attached page please write about the following question. Use both sides of the attached sheet if necessary. There is no correct answer. Please state your position.

As Turner's technical communication manager, how would you resolve this conflict of ethics between the Departments of Information Design and Engineering? Critically evaluate the ethical differences occurring in this scenario in arriving at your conclusion.

First I would get the facts. I would confront the Head of Engineering and ask him if he thought the fire-detection system was reliable and operated according to design. If he said yes, I would ask him about Turner's allegations about some of his engineers stating that they thought the system didn't work according to design. If he admitted that the system was faulty, but that he wanted the original wording in the proposal, then I would refuse to have my department write this part of the proposal (assuming my superiors allowed me to do so).

I would argue that acting on behalf of the corporation we could not morally justify intentionally deceiving the customer for the sake of profits. Our actions could very likely cause much harm to many people, far outweighing whatever benefits our company might enjoy from financial profits from the contract. Indeed our company could be held responsible for great loss of life.

As the manager of the Department of Information Design, I would feel that it is my responsibility to ensure that the information in the proposal was accurate - not only in a technical sense but in a moral sense as well.

Although a large sum of money is "on the line," steps must be taken to see that the proposal is morally valid. First, I would call a meeting with Turner and representatives of the Engineering Department in order to ascertain ^{how} ~~what~~ the system in question will operate under ~~any~~ given conditions. I would be sure that line engineers were included in this discussion. After a (hopefully) frank discussion of the capabilities of the system, I would sit down with Turner and a representative from Engineering and thrash out a new statement about the braking system. If this revised statement is not accepted by the Engineering Department, I would take the relevant statistical information to a higher authority in the company. Since there does not seem to be an subordination of either department, I am assuming that the departments are administratively equal and thus appealing to arbitration would be in order.

I would certainly not approve of the statement as originally written.

Speaking from deontological viewpoint, ~~the~~ I have a duty to not allow the paragraph that I know to be misleading to be put into the proposal. Taking a utilitarian point of view, I would still feel that the paragraph should be changed. I would feel unable to assess with any accuracy the probability that the braking system might fail. Thus I would be unable to quantify the possible happiness/unhappiness that might arise. If the braking system doesn't EVER fail, the good would be ~~be~~ attained by my company and me. But (and a big but) if the system does fail, the unhappiness caused would be immense. I do not think that it is morally justifiable to take a consequential moral stand without having any real idea of what those consequences might be.

This is an issue that I would follow up on completely, even if this means going to an agency outside the company, such as a safety agency.

The ~~to~~ manager is faced with a serious ~~other~~ moral problem: he must use reason to determine the best action for the people involved in the situation. Should the ~~to~~ manager order the present wording be kept (believing that this will give the company a lucrative contract and thus benefit everyone in the company), or should the manager inform the potential buyer of the problem (no matter what the consequences to RCR) in order to avoid a potential disaster?

The ~~more~~ best action would be to submit the proposal with a different wording — one that informs the buyer of the problem but also promises to correct the problem if given the job. RCR should not mislead the buyer about the train's safety system. Considering the problem only in regards to the company, misleading the buyer is the wrong action to take. Being dishonest is wrong, because one never knows what the consequences of dishonesty will be. Perhaps the consequences would be good (a lucrative contract); but perhaps they would be bad (a disaster, or the company finding out they had been misled even without a disaster occurring). Dishonesty is not allowed in our society.

for one simple reason - if ~~it~~ it were allowed and everyone lied, the consequence would be chaos. Society could not function if dishonesty were permissible. Therefore, one should never be dishonest.

Also, & the general people

Also, businesses must have respect for one another. They should respect each others judgment enough to be honest with each other so that each business can use its own reasoning to make decisions. Businesses that lie and mislead one another have no basis for making reasonable decisions. They will make decisions that are based on inaccurate information, and, thus, their decisions will not be based on reason. Decisions that are not based on reason are usually the wrong decisions.

By submitting an honest proposal with a promise to correct the safety system - RCR will be respecting its buyer, will be being honest, and will be letting the buyer make its own rational decision about which train is the best.

- ① First, I would not leave Samantha Turner in her present bind, or deal with Engineering through her. I would call an immediate meeting between myself and the Engineering manager to personally hear his or her side of the story. Perhaps a compromise could be reached at this time.
- ② If BCR Technologies had a legal and/or marketing department, I would contact them for legal advice and their opinions.
- ③ Fire is an extremely destructive force. An explosion or fire caused by a sudden accident could immediately dismantle a detection system. A very small fire would likely not activate the device. I don't believe that most reasonable people would literally believe that any fire would ~~the~~ activate the system and stop the train. There is a certain inference in the statement to that effect, but it is not directly stated, nor would be accepted by the average person. 137
- ④ How often does the system fail? ... 10%, 25%, 50%, 90%? This would be an extremely important piece of information to know. . . but it is not included in the scenario. I would have to get more data from Engineering.

⑤ Since all engineers agree that the system does not operate properly under the current design, I would want Engineering to come up with a plan of action. Does Engineering plan to:

1. ignore the system fault?
2. replace the system?
3. modify the system?
4. scrap the project?

Again, answers to these questions would likely depend on data provided by Engineering which is currently not available to me.

⑥ If the system was unsafe, and Engineering pushed to bid the proposal anyway, I would put the matter to a higher authority within the company. I would still allow the manual and/or proposal to stand, but only with the written "sign-off" of both the higher-up and Engineering. My job is proposal and manual writing. Once I have brought the problem to the "experts," the matter is out of my hands. However, if under my opinion the company was consistently involving itself in unlawful and/or unsafe activities, I would have little choice but to resign from the corporation.

The problem in this situation involves a dilemma: ① Keep the wording as engineering wants it and have a better chance of proposal acceptance by Mansamieria or ② make proposed changes as suggested by Miss Turner and face a lesser chance of the proposal being accepted. If the wording is kept as engineering wants it, RCH is much more likely to get the acceptance and the company would have more welcome income. From a utilitarian standpoint this seems better for RCH as a whole, especially if Miss Turner is outvoted as to what to do. Her proposed changes do not seem to be for the greatest good of her company, since her changes would jeopardize proposal acceptance. Also, jobs may possibly be jeopardized if the proposal is not accepted (because of the lost income).

In spite of the greater chance of having the proposal rejected, I favor that the words be changed to reflect that the train doors will open in some fire cases and that a better feature is in the making. If Miss Turner's suggestion is ignored and the proposal is accepted, RCH could ~~be~~ be setting itself up for problems in the future. The people at Mansamieria would ultimately hold RCH responsible for any problems with the railcars if the proposal contains misleading information. RCH could be faced with a lawsuit in the long-run if Mansamieria were led to believe that the railroad doors are fine and RCH sells them

as they are currently designed. Thus, in the long-run it would probably be best for LCH to reword the design specifications to more accurately reflect its function, but of course stating that the engineers are "ironing out the bugs" in the systems. If LCH can't meet the performance expectations of the design it should not mislead Transamerica knowing that lives are at stake.

Turner's concern about the wording of the safety-system statement obviously arises out of the potential harm to passengers that failure of such a system could cause. Turner's personal ^{moral} responsibility is thus to the society (potential passengers) & not to the engineering department or the company. Engineering obviously thinks that they have fulfilled their part by wording the safety-system statement accurately.

It is difficult to suggest a compromise given only Engineering's version of the statement. If I were the technical communication manager in this situation, I would ask to see Turner's version, along with Engineering's. I would also ask to see test data from the safety system tests conducted by Engineering.

Any railroad considering new cars would be interested in safety data; I think if no compromise on wording could be reached a footnote could be added to the statement (a) saying "data available on request." If this is a ^{public} company policy, then I think I would argue with superiors for a change in the wording.

Why? While the statement as written is true, the current mentality in consumers (even in companies as consumers) is one of ~~every~~ "everything must be perfect, or we'll sue." I think knowing that many people had knowledge of the system's inadequacies & yet were willing to allow the product to be sold with vague claims or a faulty system is simply

a time bomb situation: it would only be a matter of time before this RCK is sued or penalized by the government.

Engineering believes that using Turner's version of the proposal will result in RCR losing A major contract, while Turner feels it is important to present her wording as an accurate statement on the safety of the rail car system. The wording of this passage could have a strong effect on the state financial state of the company, as well as the safety of innocent passengers.

I would first talk to Turner in detail about her choice of wording and why she chose it. I would note all details of Engineer's comments about the system's safety hazards. I would speak with the engineers, if possible, to learn more about the problem.

I would then plan a meeting with the head of engineering to discuss the problem. It is important to recognize that the Engineering Head is concerned with the welfare of the company and its financial stability.

I would first assume that the Head is unaware of the problem and bring it to his/her Attention. If they are aware of the problem and its seriousness and still refuse to cooperate, I would appeal to the Head on business grounds -- while inclusion of the passage could result in loss of a contract, the publicity and legal problems which could result in event of an accident ~~would~~ could cause even more serious financial damage to the company than loss of ~~one~~ one contract.

I would not address the Head of Engineering's superiors unless I could receive no cooperation from Engineering in the matter. I would ask upper management to act

as Arbitrators in this conflict, again bringing out the problems of safety hazards, and potential lawsuits and negative publicity. I ~~would want~~^{feel} the company has two choices:

- a) modify the design to ensure proper safety
- or
- b) word the proposal accurately and risk the loss of a contract. Even if the contract is awarded, additional risks are involved.

My personal position is that the wording should be stated accurately in the proposal, and that the company should consider delaying the proposal, even at risk of losing the contract, to correct the design problem.

- 1) RCR Tech has a state of the art rail car
- 2) Fire safety features may need to be redesigned.
- 3) The tech writer made a clear statement to this dilemma
- 4) Head Engineer disagreed / wants it removed because he believes it will result in a loss of the sale.
- 5) All staff engineers agree that safety feature needs to be redesigned / doesn't work in all situations.

As a manager in this situation, I would feel it important to clearly understand the limitations of the fire safety features of the rail car and would try to get some general idea of the type and feasibility of any design changes necessary to meet the claim by the head engineers. I would also need to understand what the competition is doing in terms of a similar product in order to know how this design compares.

As a manager my first responsibility is to the company. I work for and that company is in the business of selling rail cars as a profit. The company probably wants to put out a good industry standard or above standard product to attract buyers for it and since does not want to produce a defective product deliberately or make a claim that is blatantly untrue.

The head engineer is thinking

very narrowly in terms of short-term gain of a lucrative contract. If the car fails to perform in just one fire far loss of even one life that may have a far reaching affect on the company in terms of lawsuits, further normal business operations that I sale on all products, bankruptcy that affects not only the company employees but suppliers, etc. There is also the legal implication of nothing to wide a claim.

What are the mandated safety standards for this type of product.

The technical writer is right to object to the head engineer's position. This discrepancy needs to be evaluated and the group should only claim what is known and possible and necessary in terms of mandated safety features.

As a manager after I have the facts that I need to make a decision I need to weigh the legitimate business interest of the company against any competing moral obligations. I have to be careful in making that decision not to assume power on behalf of the company that I do not have, eg if it is clear that the defect exists, then the problem and its ^{possible} solutions need to be kicked up to a managerial level for further evaluation.

you should have put in Turner's proposed wording in the scenario. It is difficult to guess what her wording change was. She ~~have~~ ~~had~~ gone which will definitely affect the outcome. I would take it to the legal department, and let them evaluate both sets of proposed wording, and after a resolution. If the project is that dangerous, you need to be ~~strategic~~.

If there is no legal department, I should call a meeting of the two departments. I would want to know the facts. ~~Many engineers feel the system is unsafe, is it 1 or 2, Turner~~
~~should have talked to people who are familiar with system~~
In order to make a judgement, you must know all facts.

There are several key phrases in the scenario. "Turner claims the change engineering rejected is 'quite important'". What is likelihood of a fire occurring on the train, and other methods of escape i.e. can you smash the windows? Also engineering rejected her change because "it appears to be" her version is too accurate. Again, what did she say in her revised version. You would want to know all the results of ^{every} safety test. If the safety tests indicate the train is unsafe, top management needs to be informed. The wording in the proposal is no longer the key issue. The key issue is now the project itself. The safety of the project needs to be resolved, and then the appropriate wording to the proposal which reflects the findings.

I would want to know what does not operate properly, and how far off the specifications is it. Does it take 3 seconds longer for the door to open, or do they totally fail to open? Does the train abruptly stop? How long does it take it to stop. Without the answer to these questions, I think you might make a hasty decision on the revised wording.

APPENDIX C

ETHICS COURSE SYLLABUS

(PROF. JACQUES CATUDAL, DREXEL UNIVERSITY)

Drexel
University



College of Humanities
and Social Sciences

Department of
Humanities and
Communications
(215) 895-2430

Mr. Jonathan Russell
2609 Fremont Avenue South, #2
Minneapolis, MN 55408

Monday, May 18, 1987

Dear Jon:

Enclosed is the syllabus for my graduate seminar in the ethics of technical and science communication. However, please note that in Winter 1988 I shall not be using two of the texts listed on the syllabus. These are: *The Responsibilities of Journalism*, and *The Moral Foundations of Professional Ethics*. In their place I plan to substitute Paul Camenisch's *Grounding Professional Ethics In A Pluralistic Society* (1983), and Bernard Baumrin and Benjamin Freedman's (eds.) *Moral Responsibility and the Professions* (1983). The latter texts are published by Haven Publications Corporation, G.P.O. Box 2046, New York, N.Y. 10001. You should also note that, though it is not listed on the syllabus (I discovered it too late to list it), my students also read Anthony Weston's *A Rulebook For Arguments* (Indiana: Hackett Publishing Co., 1987).

In last speaking with you on the telephone, I made reference to an article which is critical of assumptions underlying the Kohlbergian model of moral development. The complete reference is as follows: Carol Gilligan, "In A Different Voice: Women's Conceptions of Self and of Morality," *Harvard Educational Review*, vol. 47, No. 4 (November 1977).

I think the work you are doing needs to be done and will be very useful. You must certainly be thinking of publishing portions of it. Should you ever need a reader at some point, don't hesitate to call. Best of luck in bringing your work to completion.

Sincerely,

Jacques N. Catudal
Assistant Professor of Philosophy



College of Business and Administration
College of Humanities and Social Sciences
Nesbitt College of Design Arts • College of Science

College of Information Studies
College of Engineering • Evening College

ETHICS IN TECHNICAL AND SCIENCE COMMUNICATION

T341-001

Wednesdays: 6:00 - 9:00

Bldg. 6, rm. 132C

Winter '87

Dr. J. Catudal

Tel. 895-2441

Bldg. 09b, rm. 5058

Drexel University

SYLLABUS

1. Description:

A study of ancient, modern and contemporary moral theories with emphasis on the applicability of such theories to professional activities. In addition to the study of traditional moral concepts such as "virtue," "goodness," "right," and "duty," we shall critically review a recent account of the moral foundations of professional ethics. Considerations of a theoretical sort will be exemplified, tested, and refined by reference to the practice of journalism. Students will write an essay describing a morally problematic situation encountered in the practice of science and technical writing and will also provide a range of solutions.

2. Texts:

- A. *The Last Days of Socrates*; Plato. H. Tredennick, *trans.* Harmondsworth, England: Penguin Books, 1969/85.
- B. *The Elements of Moral Philosophy*; J. Rachels. New York: Random House, 1986. (Hereafter, *EMP*)
- C. *The Moral Foundations of Professional Ethics*; A.H. Goldman. Totowa, N.J.: Rowman & Allenheld, 1980. (Hereafter, *MFPE*)
- D. *The Responsibilities of Journalism*; R. Schmuhi (*ed.*), Notre Dame, Indiana: University of Notre Dame Press, 1984. (Hereafter, *RJ*)

3. Grading:

- A. A reading and comprehension quiz covering the works of Plato discussed by us. The quiz is worth 30% of the final grade. It will be given on Wednesday, January 21st.
- B. An argumentative essay discussing a moral problem arising in the practice of technical and science writing. The paper (10-12 double-spaced pages) should address the following questions:

B. (cont'd)

- i. What morally problematic situation did you address? (Accurately describe this situation.)
- ii. Why, in your opinion, is this situation *morally* problematic? Alternatively, why is the problem not (merely) of a scientific, technical, legal, and/or psychological sort?
- iii. In your opinion, how should this situation have been avoided (i.e., given the benefit of hindsight)? Argue for your opinion by reference to moral considerations (e.g., theories, arguments, distinctions, etc.) discussed by us.
- iv. Given that the situation was not avoided, what should the involved parties do now? Why should the parties follow the course of action you suggest? Argue for your suggestion by appealing to moral considerations discussed by us.
- v. Few solutions are ever perfect. What moral criticisms can be advanced against your suggested solution?
- vi. In light of these criticisms, would you change your position? If so, what changes would you make? If not, how do you respond to the criticisms?

The paper is due Wednesday, March 4th; it is worth 50% of the final grade.

- C. An oral report on one of the essays or chapters we will be reading this semester. You will be asked to state the author's thesis, the argument(s) used to support the thesis, and whether you accept or reject the thesis. Your report is worth 20% of the final grade.

4. Appointments:

Appointments can be arranged before or after class, or by telephone. You can reach me at Drexel on Mondays, Wednesdays, and Fridays

4. Appointments (cont'd):

(895-2441) or at home on other days (662-5203). You are encouraged to discuss with me the material we'll be studying this semester particularly (though not only) if you find yourself having difficulty with it.

5. Calendar:

January 7	Introduction. Socrates and "the Craft Analogy." Preview of Plato's "Apology."
January 14	Plato's "Apology," "Crito," and "Phaedo" in <i>The Last Days of Socrates</i> , pp.43-170.
January 21	Quiz. <i>EMP</i> , "The Challenge of Cultural Relativism", pp.12-24; "Subjectivism in Ethics", pp.25-38.
January 28	<i>EMP</i> , "Does Morality Depend On Religion?", pp.39-52; "Psychological Egoism", pp.53-64; "Ethical Egoism", pp.65-78.
February 4	<i>EMP</i> , "The Utilitarian Approach", pp.79-89; "The Debate Over Utilitarianism", pp.90-103; "Are There Absolute Moral Rules?", pp.104-113.
February 11	<i>EMP</i> , "Kant and Respect For Persons", pp.114-124; "The Idea of a Social Contract", pp.125-138; "What Would A Satisfactory Moral Theory Be Like?", pp.139-151.
February 18	<i>RJ</i> , pp.1-69.
February 25	<i>RJ</i> , pp.70-133.
March 4	<i>MFPE</i> , "Introduction", pp.1-33; "Legal Ethics: The Problem of Immoral But Legal Means and Ends", pp.90-155. Essay due.

March 11

MFPE "Medical Ethics: The Goal of Health and the Rights of Patients", pp.156-229; "Business Ethics: Profits, Utilities and Moral Rights", pp.230-282.

ETHICS IN EDUCATION

A REVIEW OF LITERATURE

Abstract

The literature on ethics education suggests numerous methods in which to teach students in secular universities how to critically analyze and resolve moral problems.

The literature generally surveys the history of ethics education; why we should teach ethics in secular universities; and, the many developmental theories behind the teaching of ethics.

Many of the teaching professionals who have designed methods for teaching moral maturity disagree on which method is best suited for this endeavor. It is clear from the literature that our knowledge to date is limited in two ways: we cannot establish a common method for teaching ethics and our abundant analysis describing the processes in which to teach ethics is devoid of research leading to the discovery of whether ethics courses are having a measurable impact on students. The literature does not address the latter of these limitations.

Introduction

This review of literature in ethics education reflects research cited in the Current Index to Journals in Education (CIJE), 1980-1987. Not surprisingly, the literature in education is enormous.

The large volume of literature in moral education is not surprising since moral education has been an on-going concern at least since Plato's Meno asked Socrates, "Can virtue be taught?" We still don't know the answer.

In the past seven to ten years, much of the research in this area has focused on the processes of moral education. However, though this information is of value, it is limited without research focusing on the measurable impact ethics education is having on students in secular universities.

The purpose of this review is to summarize the research in ethics education from approximately 1980 to 1987, describing what has been written and suggesting what needs further research, namely, empirical evidence focusing on the results of ethics education.

History

The literature on the history of moral education (20,38,47,55,74,88,95, 115,126) discusses the development of ethics in education in the United States.

Kaestle (76) offers a historical summary of moral education in America since the creation of the state school system in the nineteenth century, 1830-1880. He then moves to the twentieth century outlining the early industrial-age philosophies including John Dewey's rational study of ethics.

The literature on the history of ethics education generally suggests that until the middle of the nineteenth century, North American universities were sponsored by religious denominations, and the moral development of students was an integral part of education. To a great degree a common moral code existed throughout the student body. Many college presidents presented lectures designed to be instrumental in character formation and to inspire students to use their education for the betterment of society. In addition (97), efforts were made to hire faculty members of impeccable moral character to serve as role models for students.

In the late nineteenth century moral philosophy courses faded as Freudian psychology, behaviorism, and the social sciences replaced ethics courses. Callahan and Bok (20) point to Meyer's claim that the decline of moral philosophy in higher education was already underway as early as the 1880's. In 1895, the Amherst College catalog devoted the entire first page of the section on "The Course of Study" to a description of the course in ethics taught by the president of the college to the senior class. But, by 1905 ethics had disappeared from the catalog's front page billing and was to be found as an elective for sophmores.

Both the Depression and World War II shocked educators into a renewed search for curriculum unity and moral uplift. Major curriculum revision in the natural and social sciences occurred after the "Red Scare" of the fifties. Increase in crime rates, drug use, and divorce brought ethics to the fore in the 1960's and 1970's (126). Callahan and Bok (20) refer to a 1964 article presenting a sampling of 100 college and university catalogs--representing institutions of all types, and found that only 27 institutions "required any philosophy at all for graduation with bachelor of arts degrees." They found, however, since then the field of ethics has experienced a

resurgence as an area of study, not only in departments of philosophy and theology, but also in other departments and schools within universities.

Much of the literature exhorts educators to strive for a stronger ethics curriculum, especially following the Watergate crisis in the early seventies. The twentieth century has been characterized by a trend to secularization of the educational system. To accommodate religious diversity in educational institutions, "neutral" concepts of moral education were developed to replace instruction in religion.

Why Teach Ethics

Intelligent living requires not simply the making of informed choices but also taking a hand in shaping and creating the alternatives from which we have to choose. The literature focusing on "why we should teach ethics," (5,10,13,14,18,22,25,26,27,33,35,36,37,38,46,48,49,53,57,65,70,71,72,86,88, 102,106,107,109,114,119,121,122,124,137,139,141,146) contends that it is essential for individuals in our society to solve moral problems rationally. Specifically, these scholars argue that students should be equipped with reasoning skills for analyzing ethical problems.

Many link the development of a rational approach to ethics and thinking skills. In fact, two important emphases of the eighties are thinking skills and ethics. Gibson (53) finds it surprising what is not ranked among the top ten topics in time spent in instruction. "The absence of ethics. . .from the "top ten". . .appears unusual. The apparent relatively small amount of time spent on ethics. . .provide interesting, if not puzzling questions about instructional priorities." Jensen (71), however, paints a more encouraging picture by suggesting that this emphasis is changing. Though he does not claim that ethics education is ranked in colleges' top-ten-topics category, he

finds that "the last fifteen years have seen a gradually increasing interest in putting ethics in (speech communication) higher on the profession's priority scale." Jensen goes on to show how and where in curriculum, archives, conventions, conferences, textbooks, and books, this change is evidenced.

Numerous business and professional organizations express concern over the inability of many college graduates to solve problems, analyze issues, and make decisions. Especially today, it is important for students to possess mature, critical thinking skills to grapple with the great assortment of moral challenges facing industry today. Without the combination of capable thinking skills and an ethical foundation, the new technical communicator will not be in a position to be an effective decision-maker.

Rhodes (106) agrees that instituting moral education in our highly pluralistic society is vital. Churchill (26) and Bok (14) further contend that if moral values are taught, there must be a concern over who is teaching ethics and how the teacher's values permeate the teacher-student relationship.

Burton's (18) concern about moral development points to widespread support, evidenced by a Gallop Poll in 1980, showing that 84% of parents with children in public schools wanted moral training in the schools and only 12% were opposed to such direction.

A small percentage of the literature addresses the relationship between religion and ethics education (28,40,51,56,68,82,84,88,118,130,142,146). This literature, while interesting because it focuses on the religious perspective of ethics, is not directly related to ethics courses in secular universities, which must assume that ethical principles are distinct from religious dogma. This does not, however, suggest that religious training mitigates the critical thinking abilities of the morally mature student; indeed, a background in religious training supports the "conscientious and

thoughtful" processes intrinsic in the morally mature student's analysis of a moral problem. However, Kohlberg's (28) statement suggests religion coupled with ethics education equals indoctrination: "true morality, by definition, must be within the person, not imposed on him or her by religious, political, or social constraints; teaching the religious portion of morality may legitimately be undertaken by the family and the church." If religion (more precisely, the multiplicity of religions) coexisted in secular college courses, moral egoism would likely persist and impede rational thought, and precipitously damage the path to solutions to moral problems.

Much of the literature discusses whether moral education is indoctrination. Martin's (86) conservative approach to indoctrination argues that most educational worries about indoctrination are linked to matters of rationality and of ethics of belief. These are both threatened by too "open" approaches to moral education and by too "closed" approaches to areas like science education. The importance of what is involved points to a need to inform the teaching of all disciplines by reflection on their rational foundations. Martin believes that indoctrinational worries stem from the notion of Deardon's (33) "ethics of belief." Deardon uses the label coined by Clifford (27) of the nineteenth century who pin-pointed values that are as old as the topic of ethics itself. Deardon argues that ethics of belief are taught to determine how we come to form our beliefs. Martin's problem with teaching forms of belief lies in the problems about the grounds of belief, and for the most part, this is due to contemporary teaching practices today that blind learners to those original grounds.

Callan (22) argues that those who possess liberal tolerance should not be indiscriminate. He claims that if generations of the future are to benefit from liberal tolerance then a particular set of moral convictions must be

embraced. He offers a way around the problem of moral indoctrination by arguing that the moral beliefs which any truly reasonable person would want to perpetuate would not be disputed by other reasonable persons informed of all the relevant facts. Hooker (66) faults Callan for failing to make clear the distinction between "reasonable" and "liberalism." Sharp (123) attempts to circumvent the concept of indoctrinating moral education by promoting student participation in philosophical education which creates the environment of inquiry. She suggests this approach is the antithesis of indoctrination as it aims to give students the intellectual tools they need to think autonomously about moral issues, to explore the metaphysical, logical and aesthetic dimensions of these issues, and eventually to move toward the formation of their own answers resulting in moral maturity.

The acquisition of moral reasoning skills would seem to be a crucially important achievement for all students (72). Critical thinking is important for all (122). Rosen and Caplan (109) argue that considerable confusion results from disagreement about the purpose of ethics courses. Should such courses promote virtue? Should they seek only to teach rational thinking? Or should both of these purposes be sought? In addition to the problem of desirable goals, they argue there is the question of what goals can be reached given a variety of student backgrounds, capacities, desires and expectations. Wilson's (143) views tend to lead toward the cold and abstruse as he argues moral education requires a "non-partisan" approach: that is, an approach derived from pure reason and not from the tenets of any particular creed, culture, ideology, or set of "social values."

Blits (13) seems to help end this summary of why (and where) we should teach ethics, by claiming that the traditional American view, derived from our founding principles, is that moral education is a private matter and

ought to be left to individual families, but the concern with the morals of students suggests relying on the family is not enough. We could look to Aristotle's view that moral education is not only a public concern but should be the lawmaker's primary concern. "That the [moral] education of the young is a matter of paramount concern to the lawmaker," Aristotle writes, "no one would dispute" (Politics 1337a10). Frenken (46) agrees with Aristotle; but, where Aristotle argues against the privatization of moral education on liberal grounds, Frenken argues that family education is indispensable.

Developmental Theories in Ethics Education

The literature focusing on the developmental theories of ethics education (2,3,6,8,9,12,15,16,17,18,24,29,30,39,41,42,43,45,47,48,52,54,55, 59,62,63,64,66,67,69,71,73,75,78,79,80,81,83,85,87,89,90,91,92,93,94,96,98, 99,100,101,103,110,111,112,113,120,123,125,131,133,134,135,136,138,140, 144,145) is evidently voluminous. Many of the methods outlined in the literature are useful for educators needing to survey how to design strategies for teaching college ethics based courses in their specific discipline. The literature on developmental theories focus primarily on the key developers of ethics instructional methods, critics of the developers' methods, and less than a handful of authors who address the need for us to study the impact these various methods are having on students. Most of the literature focuses on the process of how to teach educators to teach ethics and focuses marginally on the need for researchers to begin to consider what knowledge students are presumably acquiring from their courses in ethics. Are students becoming more morally mature thinkers as a result of having ethics a part of their education? And if they are, wouldn't it seem to follow

that all disciplines should require ethics courses in their educational program? Everyone will encounter ethical challenges in their professional lives; therefore, everyone should have the critical thinking skills to assist them in solving these challenges.

Hartshorne and May, Raths and Simon, Peters, and Kohlberg

Burton's (18) article cites Hartshorne and May (60) as being responsible for the earliest (1926) and most comprehensive empirical researchers of moral conduct. The authors used the technique "Character Education Inquiry" (CEI) and published their findings in Studies in the Nature of Character. Their study attempted to draw on significant data analyzing moral development in students. This type of empirical research seems to have dropped by the "research wayside." If it is being pursued, it is not addressed in the current literature.

Simon and Raths (127) are cited as important developers of ethics education with their introduction of the "clarification of values" approach in 1966 which resulted in their well known text, Values and Teaching. As the term suggests, when a student clarifies his values he places himself nearer to handling moral problems maturely. This method, in itself, is laudable. But, it should not stop there. Beller (9) suggests that Simon and Raths' method avoids the "affective, unconscious elements of character formation." Beller parallels this to John Locke's theory that all education is character formation. Beller seems to make the assertion that "values clarification" cannot be isolated in the ethics education curriculum. "Values clarification" should be a subgroup of ethics education and ethics education should be, in a sense, omnipresent in our educational curriculum, not induced in intervals or parts. Beller seems to imply that the integration of ethics education should be

education's ultimate goal. But, for now, initiating at least one ethics course in all academic disciplines will begin to establish ethics as having some significant influence in education.

Peter's (103) also introduced a set of procedural principles in 1966.

He recommended that the following concepts be applied to teaching ethics:

- ☐ Equality
- ☐ Consideration of interests
- ☐ Freedom
- ☐ Respect for people
- ☐ Truth-telling

Royce (13) recognizes that, though Peters' principles may not deliver precise moral guidance, they are helpful in "sensitizing students to what is relevant when thinking about what is right and wrong." Sensitizing students to right and wrong is essential to building preliminary foundations for moral maturity.

Kohlberg

The most prominent approach to moral education is one associated with the work of Lawrence Kohlberg. Kohlberg's 1958 landmark dissertation study, "The Development of Modes of Thinking and Choices in Year 10 to 16," identified six moral stages. Kohlberg's deduction that the six stages of moral education each depended on the level to which an individual's moral judgment had matured. The aim was to study the relation of the development of moral thought to that of moral conduct and emotion. In his study, Kohlberg interviewed seventy-two children ages ten to sixteen. His material and technique were Piagetian in form. Kohlberg acknowledges that "both my content and methods of interviewing were inspired by the work of Piaget." Kohlberg's research allegedly confirmed Piaget's conclusions

surrounding cognitive development. Kohlberg's six types of moral judgment fall into three major levels of development:

- ☐ Level 1 **Preconventional**
 - Stage 1 No differentiation of moral values
 - Stage 2 Instrumental hedonism
- ☐ Level 2 **Conventional**
 - Stage 3 Empathy and affection of family members
 - Stage 4 Life is sacred in the religious moral order
- ☐ Level 3 **Autonomous**
 - Stage 5 Life is valued in relation to community welfare and universal human rights
 - Stage 6 Human life is sacred and universal human value is recognized

The Kohlbergian method operates in group discussions using moral dilemmas as models. The literature suggests that Kohlberg's basic learning environment is laudable, but the fact that he designs the moral dilemmas with selected, pre-chosen solutions discourages the "third solution" concept. The "third solution" concept is characterized by a student striving to come to a solution that lies outside the scope of pre-designed solutions. The main argument against the pre-designed-solution-environment rejects the teaching principle of "independent creativity." Giving students pre-set solutions "spoon feeds" them, in a sense, and thereby dulls the creativity processes they should be acquiring in this environment.

With the help of Turiel (82), Kohlberg developed the +1 convention. This method draws on the belief that for moral education to successfully lead to the development of higher stages of moral reasoning, a discussion group requires a leader who will present reasoning one stage above the reasoning of a second set of the group members, and the second set of group members

present reasoning one stage above the next set, and so on. For example, a discussion group with eight students would have two students at Kohlberg's Level 3, two students at Level 2, and four students at Level 1. Based on this example interaction, the Level 3's would transfer their "superior" moral reasoning capabilities to the Level 2's, trickling ultimately to the Level 1's. Kohlberg (79) states that his approach to moral discussion is based on the Socratic method which basically elicits students to pose their conflicting views on a moral dilemma which results in choosing one of the pre-set solutions to the dilemma. Kohlberg asserts that research has demonstrated that this conflict-of-views and reasoning environment confirms that higher stages of reasoning influences lower stages, and all students tend to move upward in their moral reasoning capabilities compared to students who do not engage in moral discussion groups of this kind.

Houston (67) is one of the few authors in the literature who finds Kohlberg's methods of moral development completely effective. Houston placed one group of students in the classic Kohlbergian discussion group environment and another in the lecture-style environment. He found that the group in the Kohlbergian environment affirmed the +1 convention concept.

Pekarsky's (102) article attempts to outline Kohlberg's stages of moral development showing that the stages do indeed parallel Piaget's stages of moral development: at each stage individuals conceptualize moral problems differently and bring different kinds of considerations to bear on their solutions. Since the higher stages are said to be "more adequate" than the lower ones, the aim of moral education as understood by Kohlberg is to simulate stage-progression as Piaget did. Pekarsky argues the limitations of this approach by discouraging students to "escape hatch" or grope for

alternative solutions outside the pre-set solutions. Pekarsky believes that if a student's search for alternative solutions is discouraged the student may stop looking for them. He asserts that moral dilemmas do indeed function well in education, but students cannot always be required to choose between competing moral claims and must turn to "escape hatching" which develops an "additional moral claim." Pekarsky argues that "escape hatching" elicits a much more creative approach than Kohlberg's classic discussion group environment. In another article, Pekarsky (101) tenaciously points to the defects in emphasizing either/or choices and finds a remedy by incorporating the newer emphasis on "true-to-life" situations which "do not yield ready-made solutions." He reiterates that Kohlberg avoids this emphasis completely.

The literature is generally filled with Kohlbergian critics at various levels. Wilson (142) attacks Kohlberg's strategy stating that children are basically unable to understand moral reasoning of certain kinds. Falikowski (43) argues that a limitation in the approach is that much of what Kohlberg addresses as interpersonal value conflict is often inadequate, and account for little of what "ordinary" people find morally important in daily living. He states further that Kohlberg "over emphasizes the interpersonal conflict of "you vs. me, you vs. him"; not all conflicts are *inter*personal by nature." Falikowski contends that moral development should also focus on the self or the *intra*personal conflict.

A large percentage of the literature faults Kohlberg's methods of moral development instruction using group discussion and pre-set solutions. The idea of Kohlberg's +1 convention seems to rely on the "higher" level (morally mature) student to influence the "lower" level students during the moral decision making process. Most of the critics of Kohlberg's method seem to

value his approach in that he is attempting to draw a standard focus to ethics education in and of itself. However, the authors of the literature seem to be saying that his methods would seem more plausible if two conditions were met:

1. Establish evidence supporting the concept that those individuals who fulfill Kohlberg's definition of being at "higher" moral stages of development, are in fact, adequately equipped with morally mature thinking skills to responsibly influence "lower" staged students.
2. Encourage all levels of students to think of open-ended solutions. If the "higher" level students are not encouraged to think beyond pre-set solutions, then, are they truly adequate models for the rest?

Conclusion

The literature emphasizes the developmental theory-side of ethics education to the neglect of research discovering what measurable impact ethics education is having on students. Rosenblatt and Parish (112) verify this by asserting that "little, if any, significant research has been reported showing that one particular method is superior to another."

It is evident that methods for teaching moral and critical thinking processes are available to students, but further research needs to examine the students who are acquiring moral maturity through coursework in ethics and, subsequently, which courses and methods produce the greatest impact. Moreover, there is a need to measure the effect ethics courses are having on students.

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ADDENDUM

Let it be noted that the following text should be appended to the end of the paragraph in procedure #5 on page four of the thesis, A Pilot Study Measuring Moral Maturity Among Technical Communication Students:

"At no time did the two readers or the arbiter know which student essay was associated with either the University of Minnesota or Drexel University. To ensure student anonymity, I typed each essay, issued a code name for each essay, and thoroughly shuffled the typed and coded essays before distributing a photocopied set, one to each of the two readers."